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Claims

1.   Apparatus for processing image data comprising storage means for storing instructions, memory means for storing said instructions during execution and for storing image data, processing means for performing image processing in which said image data is processed to modify color values, and display means for facilitating user interaction with said image processing, wherein

said processing means is configured such that, in response to said instructions, said image data is processed by the steps of:

identifying a color vector and a luminance range for said color vector;

defining a color vector function in response to said identification, in which said color vector is a function of luminance;

processing source image data to identify luminance values; and

modifying colors in response to said luminance values with reference to said color vector function.

2.   Apparatus according to claim 1, wherein said color vector function is defined by points on curves.

3.   Apparatus according to claim 1, wherein said color vector function is animated.

4.   Apparatus according to claim 1, wherein said color vector function is defined by applying said identified color vector to a previously defined color vector function.

5.   Apparatus according to claim **1**, wherein said color vector function is expressed as a look up table addressable by luminance values of image color data.

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6.   Apparatus according to claim **1**, wherein said color vector function defines red, green and blue displacements with reference to barycentric co-ordinates.

7.   Apparatus according to claim **1**, wherein a user performs

10   operations to control said image processing with reference to a graphical user interface presented on a monitor, said interface including a plurality of widgets for facilitating user communication with said processes for modifying color values.

15   8.   Apparatus according to claim **7**, wherein said identification of a color vector is performed with reference to a user input of co-ordinates from a two-dimensional trackball widget, in which the dimensions controllable from said trackball are dimensions of pure color.

20   9.   Apparatus according to claim **7**, wherein said color vector is displayed as a graph having three lines, one for each of red, green and blue color components, said graph having a first axis indicative of color vector and a second axis of luminance.

25   **10.**   Apparatus for processing image data comprising storage means storing instructions, memory means for storing said instructions during execution and image data, processing means for performing image

processing in which said image data may processed to modify color values, and monitor means for facilitating user interaction with said image processing, wherein

said processing means is configured such that, in response to said instructions, said image data is processed by a first step of:

initialising a color vector function, in which color vector is a function of luminance;

and then repeated steps of:

identifying a color vector and a luminance range for said color vector;

updating said color vector function with said identification;

processing source image data to identify luminance values;

modifying source image color in response to said identified source luminance values with reference to said color vector function; and

previewing said modified source image.

11. A method of processing image data in an image processing system including memory means for storing instructions and image data, processing means for performing image processing in which said image data is processed to modify color values,

said instructions defining color modifying operations to be performed by said processing means to process said image data, wherein said operations include:

identifying a color vector and a luminance range for said color vector;

defining a color vector function in response to said identification, in which color vector is a function of luminance;

processing source image data to identify luminance values; and

modifying colors in response to said luminance values with reference

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to said color vector function.

12. A method according to claim **11**, wherein said color vector function is defined by points on curves.

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13. A method according to claim **11**, wherein said color vector function is animated.

14. A method according to claim **11**, wherein said color vector

10 function is defined by applying said identified color vector to a previously defined color vector function.

15. A method according to claim **11**, wherein said color vector function is expressed as a look up table addressable by luminance values

15 of image color data.

16. A method according to claim **11**, wherein said color vector function defines red, green and blue displacements with reference to barycentric co-ordinates.

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17. A method according to claim **11**, wherein a user performs operations to control said image processing with reference to a graphical user interface presented on a monitor, said interface including a plurality of widgets for facilitating user communication with said processes for

25 modifying color values.

18. A method according to claim **17**, wherein said identification of

a color vector is performed with reference to a user input of co-ordinates from a two-dimensional trackball widget, in which the dimensions controllable from said trackball are dimensions of pure color.

5   **19.**   A method according to claim **17**, wherein said color vector is displayed as a graph having three lines, one for each of red, green and blue color components, said graph having a first axis indicative of color vector and a second axis of luminance.

10   **20.**   A method of processing image data in an image processing system including memory means for storing instructions and image data, processing means for performing image processing in which said image data is processed to modify color values,

said instructions defining color modifying operations to be performed

15   by said processing means to process said image data, wherein said operations include a first step of:

initialising a color vector function, in which color vector is a function of luminance;

and then repeated steps of:

20   identifying a color vector and a luminance range for said color vector;

updating said color vector function with said identification;

processing source image data to identify luminance values;

modifying source image color in response to said identified source luminance values with reference to said color vector function; and

25   previewing said modified source image.

21.   A computer-readable medium having computer-readable

instructions executable by a computer configurable for image processing, said computer including memory means for storing said instructions and image data, processing means for performing image processing in which said image data is processed to modify color values,

5   said instructions defining operations to be performed by said processing means to process said image data, wherein said operations include:

identifying a color vector and a luminance range for said color vector;

defining a color vector function in response to said identification, in

10   which color vector is a function of luminance;

processing source image data to identify luminance values; and

modifying colors in response to said luminance values with reference to said color vector function.

15   **22.**   A computer-readable medium according to claim **21**, wherein said color vector function is defined by points on curves.

23.   A computer-readable medium according to claim **21**, wherein said color vector function is animated.

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24.   A computer-readable medium according to claim **21**, wherein said color vector function is defined by applying said identified color vector to a previously defined color vector function.

25   **25.**   A computer-readable medium according to claim **21**, wherein said color vector function is expressed as a look up table addressable by luminance values of image color data.

26. A computer-readable medium according to claim **21**, wherein said color vector function defines red, green and blue displacements with reference to barycentric co-ordinates.

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27. A computer-readable medium according to claim **21**, wherein a user performs operations to control said image processing with reference to a graphical user interface presented on a monitor, said interface including a plurality of widgets for facilitating user communication with said 10 processes for modifying color values.

28. A computer-readable medium according to claim **27**, wherein said identification of a color vector is performed with reference to a user input of co-ordinates from a two-dimensional trackball widget, in which the 15 dimensions controllable from said trackball are dimensions of pure color.

29. A computer-readable medium according to claim **27**, wherein said color vector is displayed as a graph having three lines, one for each of red, green and blue color components, said graph having a first axis 20 indicative of color vector and a second axis of luminance.

30. A computer-readable medium having computer-readable instructions executable by a computer configurable for image processing, said computer including memory means for storing said instructions and 25 image data, processing means for performing image processing in which said image data is processed to modify color values,

said instructions defining operations to be performed by said

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processing means to process said image data, wherein said operations include a first step of:

initialising a color vector function, in which color vector is a function of luminance;

5   and then repeated steps of:

identifying a color vector and a luminance range for said color vector;

updating said color vector function with said identification;

processing source image data to identify luminance values;

modifying source image color in response to said identified source

10   luminance values with reference to said color vector function; and

previewing said modified source image.